

**SAMPLE QUESTIONS ON CHAPTERS 12 AND 13, CS
101**

- (1) Write a function

```
void lower_all(char s[])
```

which takes the C-string `s` and converts all of the uppercase letters in `s` to their lowercase version. (The rest of the characters in `s` should be unchanged.) You may assume the program contains the line

```
#include<ctype.h>
```

- (2) Repeat Question 1 using the C++ string class. So your function definition will begin with

```
void lower_all(string & st)
```

- (3) Write a function using the C++ string class

```
void less_to_more(string& st)
```

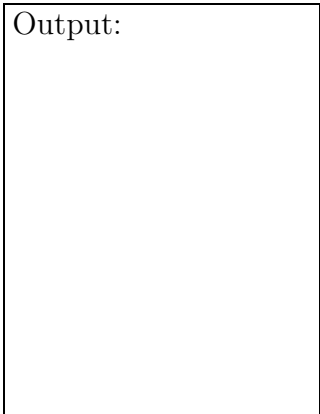
which takes every occurrence of the string "less" in `st` and replaces it with the string "more". It should also replace every occurrence of "Less" with "More". Of course, you may assume the program includes the line

```
#include<string>
```

(4) What is the output of the following program?

```
#include <iostream.h>
#include <string>
void main(){
    string a = "A word", b[2] = {"\nafter a", " word"},
        c, d = "is power.";
    c = b[0] + b[1];
    a += c + c;
    cout << a << endl << d << endl;
}
```

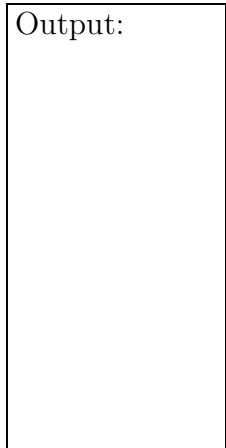
Output:



(5) What is the output?

```
#include<iostream.h>
#include<string>
void main(){
    string f = "Open";
    int i, len = f.length();
    for (i=0; i<len; i++)
        f[i] += i;
    cout << f << endl;
}
```

Output:



- (6) The file `grades.dat` contains information about courses and grades in the following format:

```
Computers and Programming I,A
English Composition,B+
General Physics,F
Feminist Theory,C+
```

The course name is immediately followed by the grade, which is immediately followed by a return character `'\n'`. The last grade `C+` is immediately followed by the end of file marker without a return character.

Write a program that reads from the file `grades.dat` to the end of file, and then prints to a file `passing.out` in a similar format. Your program should print to the file each line *except* that any line whose grade is `F` is not printed. So the file `passing.out` would be the following for the file `grades.dat` above:

```
Computers and Programming I,A
English Composition,B+
Feminist Theory,C+
```

(7) What is the output?

```
#include<iostream.h>
void part(char[],char);
void main(){
    char s[]="I think,#therefore I am.";
    part(s,'#');
}
void part(char s[], char c){
    int i=0; char *p=s;
    while(true){
        if (s[i]=='\0'){
            cout << p << endl;
            return;
        }
        if (s[i]==c){
            s[i]='\0';
            cout << p << endl;
            p=s+i+1;
        }
        i++;
    }
}
```

Output:

- (8) What is the output of the following program if the user inputs

I like programming.<ENTER>

from the keyboard?

```
#include<iostream.h>
#include<string>
void main(){
    string a, b, c;
    cout << "Enter three words: ";
    cin >> a >> b >> c;
    if (b>c) cout << a << endl;
    else cout << b << endl;
    a[0]=a[0]-'A'+'a';
    if (a<=b) cout << c << endl;
    else cout << "ERROR\n";
    cout << a << endl;
}
```

Output:

Answers:

- (1)

```
void lower_all(char s[]){
    int i=0;
    while (s[i]){
        s[i] = tolower(s[i]);
        i++;
    }
}
```
- (2)

```
void lower_all(string & st){
    int i, len=st.length();
    for (i=0; i<len; i++)
        st[i] = tolower(st[i]);
}
```
- (3)

```
void less_to_more (string & st){
    int i = st.find("less");
    while (i != -1){
        st.replace(i,4,"more");
        i = st.find("less");
    }
    i = st.find("Less");
    while (i != -1){
        st.replace(i,4,"More");
        i = st.find("Less");
    }
}
```
- (4) A word
after a word
after a word
is power.
- (5) 0qgq

- (6)

```
#include<string>
#include<fstream.h>
void main(){
    ifstream infile("grades.dat");
    ofstream outfile("passing.out");
    string name, grade;
    do{
        getline(infile, name, ',');
        getline(infile, grade);
        if (grade != "F")
            outfile << name << ", " << grade << endl;
    } while (!infile.eof());
}
```
- (7) I think,
therefore I am.
- (8) like
programming.
i